

REMARKS

This is a response to the final Office Action dated February 11, 2005.

Applicant thanks the Examiner for pointing out the discrepancy in claim 15 in paragraph 2 of the Office Action. In the version of the claim provided in Applicant's amendment dated November 22, 2004, the words "is not adaptive" were inadvertently omitted from the end of the claim due to a typographical error. These words, which appear in the original version of the claim, are restored in the listing of the claims included herewith.

Claim 11 has been rejected under 35 U.S.C. 112, second paragraph. Applicant respectfully traverses the rejections. Without conceding to the propriety of the rejection, claim 11 is amended to further improve clarity. However, no new issues are raised by the amendment that would require significant reconsideration or further searching by the Examiner. Accordingly, entry of the amendment is believed to be appropriate and is hereby respectfully requested.

Claim 11 as amended herein sets forth a rate matching pattern that forms a matrix including change bits that indicate a change of corresponding bits in a matrix of interleaved words within a data block, wherein each row of the matrix formed by the rate matching pattern includes a maximum of one of the change bits. It is respectfully submitted that the term "corresponding bits" is clearly explained by the specification. First of all, the claim refers to change bits of a matrix formed by a rate matching pattern. Fig. 2D provides an example of such a matrix with bits for deletion or repetition, e.g., change bits, indicated by "1's" (see paragraph spanning pages 8-9 of the specification, as provided at page 6 of the Preliminary Amendment filed with the application).

Additionally, it is explained in Figs. 2B and 2C that an interleaving circuit may bit-wise fill an interleaving matrix of 4 columns and 8 rows, row by row, for example (see paragraph at page 7, lines 23-31 of the specification, as provided at pages 5 and 6 of the Preliminary Amendment filed with the application).

The deletion / repetition matrix thereby provides a deletion / repetition pattern that is applied to corresponding bits of interleaved words in the interleaving matrix. For example, a first interleaved word having the bits A₁₁ through A₁₈ has a deletion / repetition pattern of 10000100 applied to it. For a repetition pattern, the changes bit indicate which bits in the first interleaved word are to be repeated (see paragraph spanning pages 8-9 of the specification, as provided at page 6 of the Preliminary Amendment filed with the application). The pattern 10000100 thus indicates that bits A₁₁ and A₁₆ are to be repeated. If the pattern of Fig. 2D was a deletion pattern, bits A₁₁ and A₁₆ would be deleted.

Claim 11 therefore meets the requirements of 35 U.S.C. 112, second paragraph. Withdrawal of the rejection is therefore respectfully requested.

Claims 1, 3, 12-16 and 25 have been rejected under 35 U.S.C. 102(a) as being anticipated by the 3GPP document. The 3GPP document provides a discussion at page 19, section 4.2.4 of rate matching which applies repetition and puncturing of different transport channels. Specifically, it is stated that for each combination of rates of different transport channels, a "puncturing/repetition factor" is assigned to each transport channel. Furthermore, section 4.2.4.1 of this reference refers to a factor P, which denotes a maximum amount of puncturing allowed (e.g., 0.2 for downlink and uplink). Accordingly, this passage regarding a puncturing/repetition factor simply provides no disclosure or suggestion whatsoever of selecting a rate matching pattern depending on an associated bit deletion or repetition pattern that is selected to ensure that

deleted or repeated bits of a data block are not required to enable all bits from a digital input to be reconstructed, as set forth in independent claims 1 and 25.

Section 4.2.4 of the reference further states that one criterion for a set of puncturing/repetition factors for different transport channels is fulfilling a desired transmission quality requirement. From this, the Examiner asserts that a quality of transmission requirement can only be achieved by ensuring that none of the required bits for error correction coding are lost, that is, by ensuring that sufficient bits to reconstruct the original data exist at the decoder. Applicant respectfully submits that this conclusion could only be made with the use of hindsight gained impermissibly from the present invention. Generally, the use of hindsight knowledge derived from the applicant's own disclosure to support an obviousness rejection under 35 U.S.C. § 103 is impermissible. See, for example, W. L. Gore and Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

Furthermore, section 4.2.4 of the reference explains that the criteria for fulfilling a desired transmission quality requirement for each transport channel means that required transmission power to meet quality requirements for all transport channels should be as low as possible. Thus, the reference by its own words explains that it is only concerned with keeping transmission power as low as possible. This could hardly be said to be a teaching to the person of ordinary skill in the art to select a rate matching pattern depending on an associated bit deletion or repetition pattern that is selected to ensure that deleted or repeated bits of a data block are not required to enable all bits from a digital input to be reconstructed.

Withdrawal of the rejection is therefore respectfully requested.

Claims 4, 6, 17, 19 and 24 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the 3GPP document in view of Okumura et al. Regarding independent claims

6, 17 and 19, these claims include analogous concepts as claim 1 at least insofar as they refer to selecting a rate matching pattern depending on an associated bit deletion or repetition pattern that is selected to ensure that deleted or repeated bits of a data block are not required to enable all bits from a digital input to be reconstructed. Accordingly, these claims are allowable at least for the reasons discussed in connection with the rejection of claim 1, above. Moreover, dependent claims 4 and 24 are allowable at least by virtue of their dependence on claims 1 and 19, respectively.

Withdrawal of the rejection is therefore respectfully requested.

Claims 11, 18 and 20-23 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the 3GPP document and Okumura et al. in view of U.S. patent 5,978,365 to Yi. Yi is cited by the Examiner as showing puncturers 1405A, 1405B that provide puncturing matrixes. However, the Examiner has not indicated how each of the features of the claims are disclosed or suggested by the prior art. The Office has therefore not met its burden to set forth a *prima facie* conclusion of obviousness. MPEP 2142. In particular, claims 11, 18 and 20-23 recite more than a puncturing matrix. Claim 11, for example, sets forth that a rate matching pattern forms a matrix including change bits that indicate a change of corresponding bits of a matrix of interleaved words within a data block, wherein each row of the matrix formed by the rate matching pattern includes a maximum of one of the change bits. The Examiner is respectfully requested to cite where the identified feature is disclosed or suggested by the prior art, or to withdraw the rejection.

Furthermore, regarding claims 18 and 20-23, the cited references fail to disclose or suggest a rate matching pattern that includes change bits for deleting or repeating bits of a data

block, where the change bits are offset with respect to each other along adjacent rows and/or columns of a matrix of the rate matching pattern.

Additionally, at page 9 of the Office Action, lines 4-5 from bottom of page, it is stated that: "The 3GPP document and Okumura substantially teaches the claimed invention described in claim 1 (as rejected above)." However, Applicant respectfully notes that Okumura has not been applied against claim 1 in the current Office Action.

Withdrawal of the rejection is therefore respectfully requested.

Claims 26-29 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the 3GPP document in view of Yi. The issues presented in this rejection are similar to those in the rejections to claims 18 and 20-23. As indicated above, the use of a puncturing matrix by Yi does not lead one of ordinary skill in the art to the inventions set forth in claims 26-29 since there is no disclosure or suggestion by the references of a rate matching pattern that includes change bits for deleting or repeating bits of a data block, where the change bits are offset with respect to each other, e.g., along adjacent columns and/or rows of a matrix of the rate matching pattern.

Withdrawal of the rejection is therefore respectfully requested.

Claim 30 has been rejected under 35 U.S.C. 103(a) as being unpatentable over the 3GPP document. Dependent claim 30 is allowable at least by virtue of its dependence on claim 25, which is allowable for the reasons discussed above.

Withdrawal of the rejection is therefore respectfully requested.

In view of the foregoing remarks herein, it is respectfully submitted that this application is in condition for allowance. Accordingly, it is respectfully requested that this application be allowed and a Notice of Allowance be issued. If the Examiner believes that a telephone

conference with the Applicant's attorneys would be advantageous to the disposition of this case, the Examiner is requested to telephone the undersigned.

Respectfully submitted,

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